

AMENDMENTS TO THE CLAIMS

Claim 1 (original): A method comprising:

depositing on a surface of a substrate a layer formed of a material comprising carbon, hydrogen, deuterium and at least one element selected from the group consisting of Si, Ge, B, Sn, Fe and Ti; and

annealing said layer in an environment comprising at least one of hydrogen and deuterium, thereby forming an annealed layer.

Claim 2 (original): The method of Claim 1, wherein said material further comprises at least one element selected from the group consisting of O, N, S and F.

Claim 3 (cancelled)

Claim 4 (original): The method of Claim 1, wherein said layer is deposited by a plasma enhanced chemical vapor deposition (PECVD) process.

Claim 5 (original): The method of Claim 4, wherein said PECVD process is performed in a parallel plate reactor wherein said substrate is placed on an electrode of the reactor.

Claim 6 (original): The method of Claim 2, wherein said material comprises carbon in an amount of about 0.5 to 95 atomic %, hydrogen in an amount of about 0.5 to 50 atomic %, at least one element selected from the group consisting of Si, Ge, B, Sn, Fe and Ti in an amount of about 0.5 to 95 atomic %, and at least one element selected from the group consisting of O, N, S and F in an amount of about 0.5 to 70 atomic %.

Claim 7 (original): The method of Claim 2, wherein said material comprises carbon in an amount of about 1 to 60 atomic %, hydrogen in an amount of about 1 to 40 atomic %, at least one element selected from the group consisting of Si, Ge, B, Sn, Fe and Ti in an amount of about 1 to 60 atomic %, and at least one element selected from the group consisting of O,

N, S and F in an amount of about 1 to 40 atomic %.

Claim 8 (original): The method of Claim 2, wherein said material comprises carbon in an amount of about 5 to 50 atomic %, hydrogen in an amount of about 5 to 30 atomic %, at least one element selected from the group consisting of Si, Ge, B, Sn, Fe and Ti in an amount of about 5 to 50 atomic %, and at least one element selected from the group consisting of O, N, S and F in an amount of about 5 to 30 atomic %.

Claim 9 (original): The method of Claim 1, wherein said annealing environment contains at least one of hydrogen and deuterium in an amount of about 0.1 to 100%.

Claim 10 (original): The method of Claim 1, wherein said annealing is performed at a temperature of about 350 °C to 500 °C and for a duration of about 1 min. to 100 min.

Claim 11 (original): The method of Claim 1, wherein said annealing is performed at a temperature of about 380 °C to 450 °C and for a duration of about 10 min. to 60 min.

Claim 12 (original): The method of Claim 1, wherein said annealing is performed at a temperature of about 400 °C to 425 °C and for a duration of about 30 min.

Claim 13 (original): The method of Claim 1, wherein said depositing step is performed in a first chamber, and said annealing step is performed in a second chamber different from said first chamber.

Claim 14 (original): The method of Claim 1, wherein said depositing step is performed in a chamber, and said annealing step is performed in the same chamber.

Claim 15 (original): The method of Claim 1, wherein said layer is annealed in an environment comprising hydrogen, and said annealed layer comprises hydrogen in an amount of about 20 to 60 atomic %.

Claim 16 (original): The method of Claim 1, wherein said layer is annealed in an environment comprising hydrogen, and said annealed layer comprises hydrogen in an amount of about 30 to 50 atomic %.

Claim 17 (original): The method of Claim 1, wherein said layer is annealed in an environment comprising deuterium, and said annealed layer comprises deuterium in an amount of about 10 to 40 atomic %.

Claim 18 (original): The method of Claim 1, wherein said layer is annealed in an environment comprising deuterium, and said annealed layer comprises deuterium in an amount of about 20 to 30 atomic %.

Claim 19 (original): The method of Claim 1, wherein said annealed layer comprises at least one of hydrogen and deuterium in a concentration which is greater at an interface with said substrate than at other portions of the layer.

Claim 20 (original): A method comprising:
depositing on a surface of a substrate a layer formed of a material comprising carbon, deuterium and at least one element selected from the group consisting of Si, Ge, B, Sn, Fe and Ti; and
annealing said layer in an environment comprising at least one of hydrogen and deuterium, thereby forming an annealed layer.

Claims 21-23 (cancelled)